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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,947	08/22/2001	Yasuyuki Unno	1232-4756	8874

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MORGAN & FINNEGAN, L.L.P.  
345 PARK AVENUE  
NEW YORK, NY 10154

EXAMINER

ANDERSON, MATTHEW A

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/934,947

Applicant(s)

UNNO ET AL.

Examiner

Matthew A. Anderson

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 40 and 43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-39, 41 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group III in Paper No. 7 is acknowledged.
2. Claims 1-11, 40, are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups I, II, and IV, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 12-16, 18-23, 41,42 are rejected under 35 U.S.C. 102(e) as being anticipated by Allan et al. (US 2003/0067679 A1).

Allan et al. discloses optical elements composed of calcium fluoride crystals having an optical axis aligned with the <100> crystal direction. The

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element is either a polarizing beam splitter or a lens. (see abstract) The element is used in an photolithography optical system in the short wavelength (i.e. ultraviolet ) applications.( col. 1 para. 0002). The lens element is described as used with a cone angle of at least 35.26'. The cone angle reads on the claimed angles. This reduces birefringence. (col. 3 para. 0026 and Fig. 1). Claims 16 depends on the intended use of the system and is not germane to the issue of patentability. Allan discloses elements with minimized birefringence (zero in the <100> direction) and is disclosed as critical (page 4 paras. 0029 and 0030). Cubic crystals (i.e. isometric crystals) include the CaF<sub>2</sub> crystals used to form the elements of Allan et al. (page 4 para. 0034).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 17, 24- 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allan et al.(US 2003/0067679 A1) and Wittekoek et al.

Allan et al. is disclosed above. In addition, Allan et al. discloses the [110] and [111] axis of the crystal in terms of birefringence in page 4 para 0031.

Allan et al. does not specifically disclose the multiple elements.

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Wittesoek et al. discloses multiple element systems and use of laser light in projection systems.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to combine the references because Allan et al. discloses elements for use in projection systems and Wittekoek discloses projection systems with multiple optical elements (see Fig. 3). Motivation is reduced birefringence afforded by the elements of Allan et al.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to form a projection system as in claim 17 because Allan et al. discloses such elements and angles and Wittekoek discloses multiple element systems.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to optimize the angles with relation to the crystal directions and the optical axis because Allan et al. discloses such to be of critical importance and to determine the amount of birefringence in the optical system.

In respect to claims 38 and 39, it would have been obvious to one of ordinary skill in the art at the time of the present invention to use laser light of 200nm or lower because Allan discloses short wavelength applications and Wittekoek et al. discloses laser light sources.

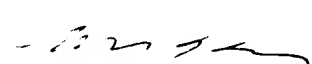
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Anderson whose telephone number is (703) 308-0086. The examiner can normally be reached on M-Th, 6:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on (703) 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MAA  
May 5, 2003

  
BENJAMIN L. UTECH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700